# PUBLIC HEALTH Bulletin

COUNTY OF ORANGE • HEALTH CARE AGENCY

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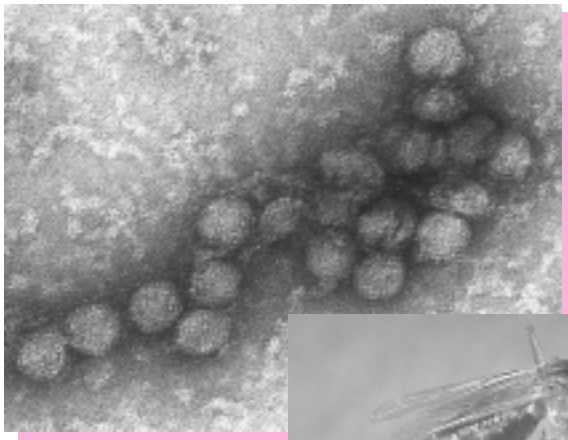
# West Nile Virus: California Bound

Most experts expect West Nile Virus (WNV) to arrive in California this spring or summer. WNV infection can be asymptomatic, or it can cause a variety of signs and symptoms from a mild febrile illness to meningitis, encephalitis and acute flaccid paralysis. It is estimated that approximately 20% of persons infected with WNV have a febrile illness, while 1 in 150 develop severe neurological disease. Neurological presentations have included ataxia and extrapyramidal signs, cranial nerve abnormalities, myelitis, optic neuritis, polyradiculitis, and seizures. Some patients also develop a maculopapular or morbilliform rash. The most significant risk factor for severe neurological disease is advanced age. Many patients have a prolonged convalescence or are left with permanent sequelae.

WNV was first identified in the United States in the summer of 1999 in New York City where it was found in a 75-mile radius centered in Queens. Since 1999, WNV has moved westward rapidly. In 2002, there were 4156 confirmed cases and 284 deaths, the largest outbreak of WNV ever recorded.



*(Above) An electron micrograph of the West Nile virus.*

*The southern house mosquito, **Culex quinquefasciatus**, is proven to be a vector associated with transmission of West Nile Virus.*

Only 4 states (Arizona, Nevada, Oregon and Utah) reported no WNV activity in humans, animals or mosquitoes. California had six imported human cases and one apparently indigenous case (in Los Angeles County; the patient reported no history of travel or other risk factors for infection) but no detections among birds, horses or mosquitoes.

In 2002 for the first time transmission was shown to have occurred by transplantation, transfusion, vertically (mother to fetus), through breastfeeding and occupationally.

Surveillance for human WNV infection consists of reporting all hospitalized cases of encephalitis of unknown etiology and testing of these patients for WNV or Saint Louis Encephalitis. Encephalitis of suspected infectious cause is a reportable condition under California law. Cases should be reported promptly to Orange County Epidemiology at (714) 834-8180.

While there is no specific treatment for WNV infection, establishing the diagnosis will avoid potentially harmful treatment for other possible diagnoses (e.g., heparin or intravenous immunoglobulin (IVIG).

## Laboratory testing for WNV

IgM antibody to WNV appears in CSF as early as the first few days of illness. Paired acute (0-8 days after onset) and convalescent (14-21 days after the acute specimen) serum specimens are used to demonstrate seroconversion. A negative IgM on acute phase serum does not rule out WNV infection. IgM antibody can persist in serum for 12 months or longer and is, therefore, not necessarily diagnostic of acute infection. For these reasons, CSF IgM and acute and convalescent phase serum for IgG antibody are most useful for diagnosing WNV infection. Because of cross-reactions with other flaviviruses, confirmation by a neutralization assay is necessary to confirm the diagnosis. In fatal cases, brain tissue, heart blood and buffy coat samples can be submitted. Polymerase chain reaction (PCR) tests of CSF are not sensitive enough to be relied upon for diagnosis and should not replace tests for WNV antibody in

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# Smallpox vaccination focus shifts

The Orange County Health Care Agency is refocusing its smallpox preparedness efforts on developing and maintaining a larger cadre of individuals who are trained to administer smallpox vaccinations, beginning first with the Health Care Agency's staff.

According to County Health Officer Dr. Mark Horton, the new training effort signals a redefinition of the concept of preparedness to respond to a possible bioterrorism event. "Our preparations for Phase One of the national smallpox plan were outstanding, and I was very pleased with what we accomplished," said Dr. Horton. "By concentrating our efforts and resources on the development of a large group of trained vaccinators, we will be taking the next step to increase our level of preparedness."

*The Health Care Agency initiated smallpox vaccinations under phase one of the national program in March 2003. The Agency's efforts will now focus on expanding the number of trained vaccinators available to respond to a possible smallpox case.*

During phase one of the smallpox vaccination program, approximately 75 individuals in Orange County volunteered for participation on public health and medical response teams and were vaccinated, with the majority of the volunteers coming from the Health Care Agency (HCA). This included 26 HCA staff members qualified to serve as vaccinators. The next phase of the preparedness effort will involve providing vaccinator training to all of HCA's qualified licensed medical personnel, such as nurses and physicians. The training is expected to be conducted during the Summer of 2003.

A second phase of the vaccinator training effort will involve Orange County's hospitals, which will be asked to develop a plan on how they would vaccinate their entire hospital staff within 72 hours should a potential smallpox incident occur. Also included in this phase will be providing vaccinator training to representatives of the County's fire departments and ambulance companies. In later phases, other community health care providers may be invited to participate in vaccinator training.

Vaccinator training resources are available from several sources, including The Centers for Disease Control and Prevention, which has a complete training page located at http://www.bt.cdc.gov/agent/smallpox/training/. The California Distance Learning Health Network has an interactive CD-ROM based smallpox vaccination training program available for purchase through their website at http://www.cdlhn.com/.

## WNV *(Continued from Page 1)*

CSF and serum. Orange County Epidemiology can assist with testing and confirmation—call (714) 834-8180.

### Control measures

The most effective means for limiting the risk of WNV infection is through elimination of mosquito breeding sites, including even small amounts of standing water. Additional preventive measures include avoiding outdoor activity at the time when mosquitoes are most active (dawn and dusk), using mosquito repellent, and assuring that window and door screens are in good condition.

### Additional information

- *Centers for Disease Control & Prevention (CDC)*
  http://www.cdc.gov/ncidod/dvbid/westnile/index.htm
- *Medline WNV information*
  http://www.nlm.nih.gov/medlineplus/westnilevirus.html
- *Cornell University*
  http://www.cfe.cornell.edu/erap/WNV/
- *State of California West Nile Virus site*
  http://www.westnile.ca.gov/

## 17th Annual California conference on Childhood Injury Prevention

September 22-24, 2003

Radisson Hotel, Los Angeles Airport

**Goal:** Update public health and public safety professionals, nurses, physicians and injury prevention advocates on current issues and future directions in injury epidemiology, public policy and injury prevention strategies.

**Focus:** State and National injury control priorities.
New research on child and adolescent injuries.
Injury prevention program models and lessons learned.

**Contact:** Center for Injury Prevention Policy and Practice
San Diego State University
6505 Alvarado Road, Suite 208
San Diego, CA 92120
(619) 594-3691
Website: www.cippp.org

**Sponsor:** The conference is conducted in conjunction with the Maternal and Child Health Branch of the California Department of Health Services.

Continuing education credits will be available for physicians, registered nurses, EMTs/paramedics and health educators.

COUNTY OF ORANGE
HEALTH CARE AGENCY
PUBLIC HEALTH
Disease Control & Epidemiology

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July 28, 2003

Dear Healthcare Provider:

The staff at the County of Orange Health Care Agency Tuberculosis Control Program has enjoyed working with you and appreciates your assistance in the identification and treatment of patients with latent TB infection and active TB disease. Due to budget constraints, ***as of August 1, 2003, Public Health's TB Control Clinics will no longer provide tuberculin skin testing of asymptomatic patients at lower risk of developing active TB. Nor will screening tuberculin skin tests be provided to individuals needing work or school clearance, including teachers, school volunteers, or certificated employees.*** If you choose to provide tuberculin skin testing to these individuals, follow-up chest x-rays will need to be done by private medical providers due to limited County resources. We will continue to be available for consultation on patients with abnormal or questionable x-rays.

Tuberculin skin testing services will continue for contacts to active TB cases and for targeted testing of select high-risk groups, including the HIV-infected, class B immigrants and refugees, and for source case investigations performed as a result of a positive tuberculin skin test in a child under five years of age.

Chest x-ray services will be curtailed. ***"Clearance for Work" chest x-rays on asymptomatic individuals with a history of a previous positive TB skin test will no longer be provided.*** Chest x-rays will be available to rule out active TB disease for those with a history of TB symptoms, regardless of skin test results.

***Finally, treatment of latent TB infection at Public Health's TB Control Clinics will be limited to close contacts of active TB cases and skin test positive individuals at the highest risk of development of active TB disease. These include the HIV-infected, class B immigrants and refugees, documented tuberculin skin test converters (persons with a new positive skin test within a 2 year period), and children identified as positive during preschool or CHDP school entry examination.***

Although our ability to support broad-based tuberculin skin testing has been diminished, please be assured that our capacity to treat every case of active TB and to perform an immediate and aggressive contact investigation surrounding each new case of active TB remains intact. Continuum of care services for TB cases, including directly observed therapy (DOT), hospital-based diagnostic services, and any required hospital or step-down care will continue as currently performed. These services are the core of a TB control program and will be provided in accordance with State and Federal standards.

We look forward to continued collaboration with you to ensure the best possible use of resources available to address TB in our community. If you have additional questions about these changes, please feel free to call Mike Carson, TB Program Manager at (714) 834-8406 or Susan Sawley, Supervising Public Health Nurse at (714) 834-7725.

Sincerely,

Mark Horton, M.D., M.S.P.H.
Deputy Agency Director/ Health Officer

Julie Low, M.D.
TB Controller

# SARS tests public health response

While recent World Health Organization (WHO) reports indicate that Severe Acute Respiratory Syndrome (SARS) may be on the decrease worldwide, the possibility exists for a return of the virus in the future. Because most practitioners have had limited or no experience with the evaluation of SARS patients, the following information may assist clinicians in preparing for any recurrence of the SARS virus.

An outpatient guideline for physician offices is available at http://www.oc.ca.gov/hca/docs/public/epi/sars-outpt-guidance.pdf. The information is also posted on the Orange County Medical Association website at www.ocma.org. The CDC web site has additional information at http://www.cdc.gov/ncidod/sars/. It is crucial to contact Orange County Public Health as soon as you suspect that a patient might have SARS (Monday through Friday, 8:00 AM to 5:00 PM call Epidemiology at (714) 834-8180; after hours, weekends and holidays contact the Public Health Official On Call via Sheriff Communications at (714) 628-7008).

At present, the primary mode of transmission of the SARS coronavirus appears to be through droplet spread; however, airborne and contact spread may also play a role. Reviewing and reinforcing with staff proper infection control procedures and the use of personal protective equipment is one of the first lines of defense against SARS and other communicable diseases with the potential for airborne and contact transmission. Infection control measures should be instituted immediately for any patient who has a history of exposure to SARS and fever or respiratory symptoms. This involves the use of eye protection, gowns, gloves and respiratory protection, preferably with the use of a N-95 disposable respirator in accordance with CAL-OSHA regulations.

Patients should be evaluated based on the symptoms and exposure history. The exposure criteria is currently defined as: within the last 10 days, a history of 1) travel to an area with ongoing SARS transmission, OR; 2) contact to a suspected or probable SARS case. For the current case definition, please refer to http://www.cdc.gov/ncidod/sars/casedefinition.htm

The following laboratory tests are recommended by The Centers for Disease Control and Prevention (CDC) for possible SARS patients (along with any other diagnostic tests appropriate to the patient's presentation). **These tests are to be done by the hospital/clinic/office clinically evaluating the patient.**

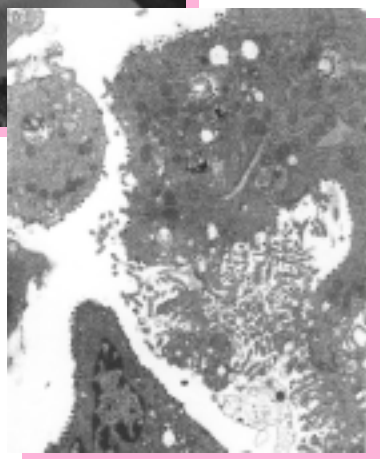
- Sputum gram stain and culture (bacterial—including for *Legionella*, and viral)
- Blood culture
- Rapid influenza and RSV tests
- *Legionella* urine antigen
- Tests for *Chlamydia* and *Mycoplasma*
- Chest X-ray
- WBC with differential (including absolute neutrophil and lymphocyte counts); platelet count

Additional specimens for possible testing by Public Health (including the California Department of Health Services and/or CDC):

- Acute—two (2) nasopharyngeal NP swabs collected within 7 days after the onset of fever.[1]
- Lower respiratory (if available)—bronchoalveolar lavage, tracheal aspirate, and/or pleural tap
- Acute serum (at least 3 cc, collected within 7 days of onset); ship on wet ice
- Stool (10–50 cc) in stool cup or urine container with secure cap and sealed with parafilm; ship on wet ice. If stool specimen cannot be obtained, submit rectal swab in viral transport medium.
- Urine (10–50 cc) should be placed in a urine container, capped securely, sealed with parafilm and bagged.

Other tests that may be useful:

- Liver enzymes—lactate dehydrogenase (LDH), alanine aminotransferase (ALT), aspartate aminotransferase (AST).



*This image (right) shows pathologic cytoarchitectural changes indicative of diffuse alveolar damage, as well as a multinucleated giant cell with no conspicuous viral inclusions.*

For current information on recommended laboratory specimens and testing, please call Public Health Epidemiology at (714) 834-8180. Any patient meeting the exposure criteria who has a fever and/or respiratory symptoms must be reported immediately to Orange County Public Health [Monday through Friday, 8:00 AM to 5:00 PM call Epidemiology at (714) 834-8180; after hours, weekends and holidays contact the Public Health Official On Call via Sheriff Communications at (714) 628-7008].

[1]Use only sterile dacron or rayon swabs with plastic shafts. Do **NOT** use calcium alginate swabs or swabs with wooden sticks, as they may contain substances that inactivate some viruses and inhibit PCR testing. Place swabs immediately into **separate** sterile vials containing 2 ml of **viral transport media**. Break the applicator sticks off near the top of the container to permit tightening of the cap.

# CDC health alert registration urged

County Health Officer Mark B. Horton, M.D., is urging Orange County clinicians to register for a free service from the Centers for Disease Control and Prevention (CDC) to provide real-time information on terrorism preparedness and response issues.

The CDC has set up the registry to provide clinicians with regular e-mail updates on terrorism and other emergency issues and on training opportunities relevant to clinicians. The information is designed to assist health care providers in preparing for and possibly responding to terrorist events. To sign up for the registry and receive e-mail updates, please go to http://www.bt.cdc.gov/clinregistry/index.asp and provide the requested information. You will not be asked to provide your name or other personal information.

The national registry is seen as an important part of the on-going effort to prepare clinicians for the impact of a terrorism event. It is open to physicians, nurses, other practitioners and public health professionals.

## ORANGE COUNTY REPORTED CASES OF SPECIFIED NOTIFIABLE DISEASES

| DISEASE | First Quarter (Weeks 1-13) Number of Cases by Year of Report 2003 | 2002 | 2001 | 2000 |
|---|---|---|---|---|
| AIDS | 62 | 58 | 92 | 76 |
| AMEBIASIS | 0 | 3 | 5 | 6 |
| CAMPYLOBACTERIOSIS | 42 | 52 | 59 | 47 |
| CHLAMYDIA | 1,368 | 1,517 | 1,129 | 948 |
| CRYPTOSPORIDIOSIS | 3 | 4 | 3 | 0 |
| E-COLI O157:H7 | 1 | 0 | 0 | 0 |
| FOOD POISONING OUTBREAKS | 10 | 19 | 3 | 1 |
| GIARDIASIS | 32 | 36 | 47 | 62 |
| GONOCOCCAL INFECTION | 187 | 212 | 119 | 116 |
| H-FLU, INVASIVE DISEASE | 1 | 1 | 1 | 0 |
| HANSEN'S DISEASE, LEPROSY | 0 | 0 | 0 | 0 |
| HEPATITIS A (acute) | 23 | 30 | 48 | 62 |
| HEPATITIS B (acute) | 6 | 11 | 12 | 19 |
| HEPATITIS B (chronic) | 332 | 333 | 622 | 446 |
| HEPATITIS B (perinatal, acute & chronic)[1] | 0 | 1 | NA | NA |
| HEPATITIS C (acute) | 3 | 0 | 1 | 0 |
| HEPATITIS C (chronic) | 395 | 346 | 622 | 589 |
| HEPATITIS OTHER/UNSPECIFIED | 1 | 5 | 1 | 13 |
| HIV[2] | 205 | NA | NA | NA |
| KAWASAKI DISEASE | 7 | 3 | 3 | 2 |
| LISTERIOSIS | 0 | 5 | 4 | 3 |
| MALARIA | 2 | 4 | 3 | 5 |
| MEASLES (RUBEOLA) | 0 | 2 | 4 | 0 |
| MENINGITIS, TOTAL | 66 | 64 | 39 | 64 |
| ASEPTIC MENINGITIS | 47 | 47 | 28 | 39 |
| MENINGOCOCCAL INFECTIONS | 4 | 2 | 6 | 12 |
| MUMPS | 1 | 4 | 1 | 0 |
| NON-GONOCOCCAL URETHRITIS | 162 | 220 | 152 | 141 |
| PERTUSSIS | 18 | 26 | 3 | 7 |
| PELVIC INFLAMMATORY DISEASE | 9 | 17 | 9 | 8 |
| RUBELLA | 0 | 0 | 0 | 0 |
| SALMONELLOSIS | 55 | 54 | 51 | 76 |
| SHIGELLOSIS | 30 | 27 | 12 | 76 |
| STREP, INVASIVE GROUP A | 13 | 25 | 10 | 18 |
| SYPHILIS, TOTAL* | 71 | 89 | 55 | 60 |
| PRIMARY | 3 | 5 | 5 | 2 |
| SECONDARY | 5 | 2 | 8 | 3 |
| EARLY LATENT | 3 | 6 | 7 | 4 |
| LATENT | 3 | 1 | 4 | 1 |
| LATE LATENT | 56 | 75 | 31 | 42 |
| CONGENITAL | 1 | 0 | 0 | 8 |
| NEUROLOGICAL | 0 | 0 | 0 | 0 |
| TUBERCULOSIS | 19 | 14 | 37 | 29 |
| TYPHOID FEVER, CASE | 6 | 1 | 0 | 0 |

*Includes one congenital rubella case NA= Not Available

[1]Previously included in Hepatitis B acute or chronic totals. Separate reporting started in 2002.

[2]Orange County officially began HIV case reporting July 1, 2002; data is unavailable for previous years.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